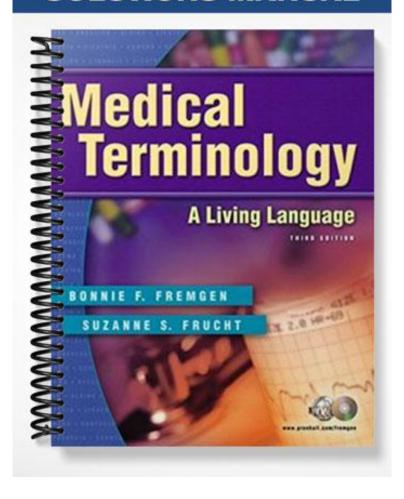
SOLUTIONS MANUAL



Chapter 2

Body Structure

Objective	Text	Quiz	Content Abstract	
1. Recognize the	24	2A	Combining Forms	Relating to Body Structure
Recognize the combining forms and prefixes introduced in this chapter.	24	2A	Combining Forms 1. abdomin/o 2. adip/o 3. anter/o 4. caud/o 5. cephal/o 6. chondr/o 7. crani/o 8. cyt/o 9. dist/o 10. dors/o 11. epitheli/o 12. hist/o 13. infer/o 14. later/o 15. medi/o 16. muscul/o 17. neur/o 18. organ/o 19. oste/o 20. pelv/o 21. poster/o 22. proxim/o 23. somat/o 24. spin/o 25. super/o 26. system/o 27. thorac/o	Meaning abdomen fat front tail head cartilage skull cell away from back of body epithelium tissue below side middle muscle nerve organ bone pelvis back near to body spine above system chest
			28. ventr/o 29. viscer/o Prefixes Relating t	belly internal organ
			Prefix 1. epi- 2. inter- 3. intra- 4. peri- 5. post- 6. retro- 7. sub- 8. supra- 9. trans-	Meaning above between within around or about behind or after behind or backward under or below above through or across
2. Gain the ability to pronounce medical terms.			 In the text in parer In the Pronunciatio In the Audio-glossa	ical terms in this chapter can be found: ntheses following the term on Practice list at the end of the chapter ary on the CD-ROM ary at the Companion Website
3. Discuss the organization of the body in terms of cells, tissues, organs, and systems.	24–27		the body are composite b. Tissues—formed wactivity. c. Organs—groups of	it of all living things. All the tissues and organs in osed of cells. hen cells are grouped together to perform one tissues coming together to perform special functions. organs working in a compatible manner to perform a

Teaching Strategies	Practical Activities	Factoid	Multimedia
Have the students add the new combining forms to their flash cards.	Have the students select two of the professions listed in the Professional Profile and visit their websites. Association of American Medical Colleges at www.aamc.org American Association of Colleges of Osteopathic Medicine at www.aacom.org American Academy of Physician Assistants at www.aapa.org American Association of Medical Assistants at www.aama-ntl.org	The Association of American Medical Colleges (commonly abbreviated AAMC) is a national nonprofit organization founded in 1876 that works to improve the nation's health through the advancement of medical schools and teaching hospitals. The AAMC originally only represented medical schools. However, according to the AAMC website, in addition to representing the nation's 125 accredited medical schools, they also represent nearly 400 major teaching hospitals, more than 105,000 faculty in 98 academic and scientific societies, and the nation's 66,000 medical students and 97,000 residents.	
Have the students add the new prefixes to their flash cards.			
Say each new term in class and have the students repeat. Students may also form groups and practice pronouncing the words together.	Using the Pronunciation Practice list, instruct the students to practice saying each word, referring to the Audio-glossary on the CD- ROM, if needed.		
See PP Figure 2.1			
			Continued

Objective	Text	Quiz	Content Abstract	
4. Define the four types of tissues.	26–27		and produces movement within b. Epithelial tissue—This tissue, for organs and also acts as a covering c. Connective tissue—This tissue structures.	ound throughout the body, lines internal
5. List the major organs found in the 12 organ systems.	28–33	2B		
			Body System	Organs in the System
			1. Integumentary	a. skin b. hair c. nails
			2. Musculoskeletal	a. muscles b. tendons c. bones d. joints
			3. Cardiovascular	a. heartb. arteriesc. veinsd. capillaries
			4. Hematic system	a. plasmab. red blood cellsc. white blood cells
			5. Lymphatic	a. thymus glandb. spleenc. lymph vesselsd. lymph nodes
			6. Respiratory	a. noseb. pharynxc. larynxd. tracheae. bronchial tubesf. lungs
			7. Digestive	 a. mouth b. salivary glands c. pharynx d. esophagus e. stomach f. small intestines g. colon h. liver i. gallbladder j. pancreas
			8. Urinary	a. kidneysb. urinary bladderc. uretersd. urethra
			9. Female reproductive system	a. ovariesb. fallopian tubesc. uterusd. vagina

Teaching Strategies	Practical Activities	Factoid	Multimedia
See PP Figure 2.2A See PP Figure 2.2B See PP Figure 2.2C See PP Figure 2.2D			
At the beginning of the lesson, name each body system and see how many organs the class can correctly identify for each. See PP Figure 2.3	Assign the students an organ from one of the body systems and have them prepare a one page report. Ask students to rank the body systems in order of importance. Discuss their answers in class.		
See PP Figure 2.5			See PowerPoint presentation on the accompanying IRCD for an animation showing the Endocrine System.
See PP Figure 2.6			
C			
See PP Figure 2.7			See PowerPoint presentation on the accompanying IRCD for an animation showing the Lymphatic System.
See PP Figure 2.8			See PowerPoint presentation on the accompanying IRCD for an animation showing the Respiratory System.
See PP Figure 2.9			See PowerPoint presentation on the accompanying IRCD for an animation showing
See PP Figure 2.10			the Digestive System. See PowerPoint presentation on the accompanying IRCD for an animation showing the Urinary System.
			Continued

Objective	Text	Quiz	Content Abstract	
			Male reproductive sys	b. vas deferens c. urethra d. prostate gland e. penis a. thyroid gland b. pituitary gland c. testes d. ovaries e. adrenal glands f. pancreas g. parathyroid gland h. pineal gland i. thymus gland a. brain b. spinal cord c. nerves
			12. Special senses	a. eyes b. ears c. nose d. tongue e. skin
6. Describe the anatomical position.	34–35		 relationships of a struct A body in the anatomic side of the body, the pa looking straight ahead. the toes pointing forwa For descriptive purpose 	n is used when describing the positions and ure in the human body. The position is standing erect with the arms at the lms of the hands facing forward, and the eyes In addition, the legs are parallel with the feet and rd. Is the assumption is always that the person is in the eyen if the body or parts of the body are in any
7. Define the body planes.	34–35	2C	any of its parts into riglb. Frontal plane—The fro	ntal or coronal plane divides the body into front ther words, this is a vertical lengthwise plane
			c. Transverse plane—The that runs parallel to the	transverse or horizontal plane is a crosswise plane ground. This imaginary cut would divide the pper and lower portions.
8. Define directional	36–37	2D	Directional Term	Definition
and positional terms.			 superior cephalic inferior or caudal anterior or ventral posterior or dorsal medial lateral apex base proximal distal superficial deep supine prone 	More toward the head, or above. More toward the feet or tail, or below. More toward the front or belly-side of the body. More toward the back or spinal cord side of the body. Refers to the middle or near the middle of the body or the structure. Refers to the side. Tip or summit of an organ. Bottom or lower part of an organ. Located closer to the point of attachment to the body. Located farther away from the point of attachment to the body. More toward the surface of the body. Further away from the surface of the body. The body lying horizontally and facing upward. The body lying horizontally and facing

Teaching Strategies	Practical Activities	Factoid	Multimedia
See PP Figure 2.11			See PowerPoint presentation on the accompanying IRCD for an animation showing the Brain and Brainstem.
See PP Figure 2.12			
See PP Figure 2.13			See PowerPoint presentation on the accompanying IRCD for an animation showing the Ear.
See PP Figure 2.14			See PowerPoint presentation on the accompanying IRCD for an animation showing the Eye.
See PP Figure 2.15			
Coo DD Eigene 2.17			
See PP Figure 2.16			
See PP Figure 2.17 Refer to Table 2.2			
After all directional terms and body planes have been			
covered, stand in front of the class and make hand motions			
to indicate each directional			
term and body plane. Instruct students to say each term as			
you make the motion. Repeat and speed up. Select various			
body parts; have students determine the directional			
relationship of the two parts using these new words.			
Example: The wrist is (<i>distal</i>) to the elbow.			
The elbow is (<i>proximal</i>) to the wrist.			
See PP Figure 2.18 See PP Figure 2.19			Continued
<i>5</i>			Body Structure 31

Body Structure **31**

Objective	Text	Quiz	Content Abstract	
9. List the body cavities	38–39		Dorsal cavities	
and their contents.			Cranial cavity Spinal cavity	Brain Spinal cord
			Ventral cavities	
			Thoracic cavity	Pleural cavity: lungs Pericardial cavity: heart Mediastinum: heart, esophagus, trachea, thymus gland, aorta
			The thoracic cavity the diaphragm.	is separated from the abdominopelvic cavity by
			Abdominopelvic	cavity
			Abdominal cavity	Stomach, spleen, liver, gallbladder, pancreas, and
			Pelvic cavity	portions of the small intestines and colon Urinary bladder, ureters, urethra, and portions of the small intestines and colon Female: uterus, ovaries, fallopian tubes, vagina Male: prostate gland, seminal vesicles, portion of the vas deferens
10. Locate and describe the nine anatomical divisions of the abdomen.	39–40	2E	lower ribs. 2. Epigastric: Middle 3. Left hypochondre lower ribs. 4. Right lumbar: Rig 5. Umbilical: Centra 6. Left lumbar: Left 7. Right iliac: Right 8. Hypogastric: Mid	e area of upper row above the stomach. riac: Left lateral region of the upper row beneath the ght lateral region of the middle row at the waist. al area over the navel. lateral region of the middle row at the waist. lateral region of the middle row at the groin. dele region of the lower row at the groin. dele region of the lower row at the groin. eral region of the lower row at the groin.
11. Locate and describe the four clinical divisions of the abdomen.	40–41	2F	 Right upper quadrant (RUQ): Contains majority of liver, gallbladder, small portion of pancreas, small intestines, and colon. Right lower quadrant (RLQ): Contains small intestines and colon, right ovary and fallopian tube, appendix, and right ureter. Left upper quadrant (LUQ): Contains small portion of liver, spleen, stomach, majority of pancreas, small intestines, and colon. Left lower quadrant (LLQ): Contains small intestines and colon, left ovary and fallopian tube, and left ureter. 	
12. Interpret	42	2G	Abbreviations Re	lating to Body Structure
abbreviations associated with body structure.			1. AP 2. CV 3. GI 4. GU 5. lat 6. LLQ 7. LUQ 8. MS 9. PA 10. RLQ 11. RUQ	anteroposterior cardiovascular gastrointestinal genitourinary lateral left lower quadrant left upper quadrant musculoskeletal posteroanterior right lower quadrant right upper quadrant
		2H	12. UGI	upper gastrointestinal

Teaching Strategies	Practical Activities	Factoid	Multimedia
See PP Figure 2.20			
Refer to Table 2.3			
See PP Figure 2.21			
See PP Figure 2.22			
Name a body part located			
in the abdomen and have			
the students identify in which region it is located.			
Have the students use			
each abbreviation in a			
sentence.			
	1		

NAN	ЛЕ	DATE	SCORE	
-	Z 2A ections: Define the combining forms in t	the spaces provided.		
1.	abdomin/o			
2.				
3.	anter/o			
	caud/o			
	cephal/o			
6.	chondr/o			
	crani/o			
	cyt/o			
	dist/o			
	dors/o			
11.	epitheli/o			
12.	hist/o			
13.	infer/o			
14.	later/o			
15.	medi/o			
16.	muscul/o			
17.	neur/o			
	organ/o			
	oste/o			
	pelv/o			
	poster/o			
	proxim/o			
	somat/o			
	spin/o			
	super/o			
	system/o			
	thorac/o			
	ventr/o			
	viscer/o			
	epi			
	interintra			
	intra-			
	peri-			
	post-			
	retro-			
	sub-			
	supra- trans-			
<i>J</i> 0.				
34	Chapter 2			

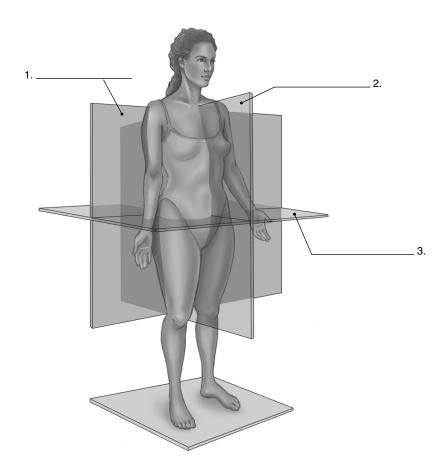
NAN	1E		DATE	SCORE
QUIZ Dire		f the organs that are	included within each bod	y system in the spaces provided.
1.	Integumentary	a		
2.	Musculoskeletal	a		
		b		
		C		
		d		
3.	Cardiovascular	a		
		b		
		C		
		d		
4.	Hematic system	a		
		b		
		C		
5.	Lymphatic	a		
		b		
		C		
		d		
6.	Respiratory	a		
		b		
		C		
		d		
		e		
		f		
7.	Digestive	a		
		b		
		C		
		d		
		e		
		f		
		g		
		h		
		i		
		j		
8.	Urinary	a		
		b		
		C		
		d		

9.	Female reproductive system	a
	•	b
		C
		d
		e
	Male reproductive system	a
	mare reproduced to office in	b
		c
		d
		e
10	Endocrine	a
10.	Liidociiiic	b
		c
		d
		e
		f
		g
		h
	N	i
11.	Nervous	a
		b
		C
12.	Special senses	a
		b
		С
		d

NAME	DATE	SCOF	ίΕ

QUIZ 2C

 $\label{eq:definition} \textbf{Directions: Identify the anatomical planes.}$

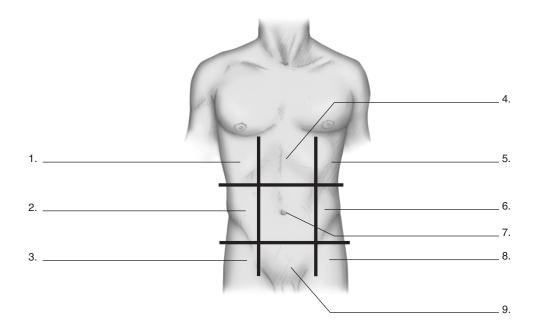


NAME		DATE	SCORE	-
	IZ 2D ections: Place the definition/description of the di	ectional position in the	space next to the term.	
1.	superior or cephalic			
	inferior or caudal			
	anterior or ventral			
	posterior or dorsal			
5.	medial			_
	lateral			_
	apex			_
	base			
	proximal			
	distal			_
	superficial			
	deep			
	supine			
	prone			

NAME	DATE	SCORE

QUIZ 2E

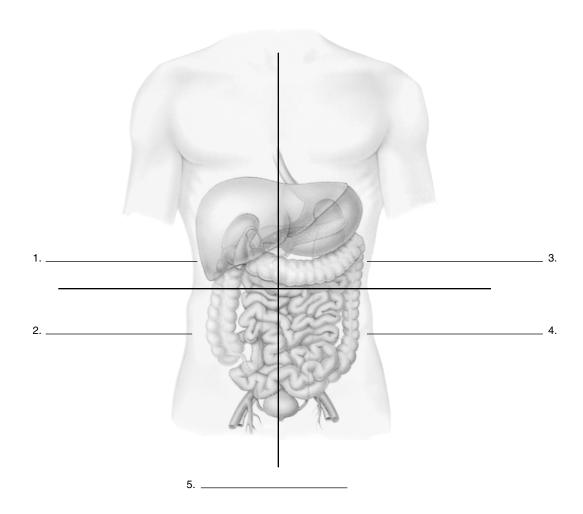
Directions: Identify the nine anatomical divisions of the abdomen.



NAME	DATE	SCORE	

QUIZ 2F

 $\label{lem:decomposition} \textbf{Directions: Identify the five clinical divisions of the abdomen.}$



NAME		DATE	SCORE	
QUIZ Dire	Z 2G ctions: Write the medical term for whic	ch each abbreviation stands.		
1.	AP			
	CV			
	GI			
	GU			
5.	lat			
	LLQ			
7.	LUQ			
	MS			
	PA			
	RLQ			
	RUQ			
	UGI			

NAN	1E	DATE		SCORE
QUIZ Dire		H ons: Circle the correct answer.		
1.	Wh	which of these terms pertains to the back of the body?		
	A.	. cephalic		
	В.	. coronal		
	C.	. dorsal		
	D.	. ventral		
2.	Late	ateral means		
	A.	. closer to the point of attachment to the body		
	В.	. near the front of the body		
	C.	. near the middle of the body		
	D.	. toward the side of the body		
3.	The	ne front or belly-side of the body is called the	_ surface.	
	A.	. abdominal		
	В.	. dorsal		
	C.	. posterior		
	D.	. ventral		
4.	Wh	Thich plane divides the body into front and back portions?		
	A.	. frontal (coronal)		
	В.	. horizontal		
	C.	. sagittal		
	D.	. transverse		
5.	The	ne sagittal plane divides the body into		
	A.	. anterior and posterior portions		
	В.	. cephalic and caudal halves		
	C.	C .		
	D.	. upper and lower sections		
6.	Wh	hich body cavity contains the lungs, heart, aorta, esophagu	is, and trachea?	
	A.	. thoracic cavity		
	В.	1		
	C.	•		
	D.	. dorsal cavity		
7.	Wh	which plane divides the body into upper and lower portions	?	

A. sagittal planeB. transverse planeC. midsagittal plane

D. frontal (coronal) plane

- 8. Which term is the opposite of proximal?
 - A. medial
 - B. ventral
 - C. distal
 - D. inferior
- 9. The combining form *viscer/o* means:
 - A. tissue
 - B. internal organ
 - C. organ
 - D. belly
- 10. The prefix *supra-* in the term *suprapubic* means:
 - A. under
 - B. across
 - C. above
 - D. backward

Chapter 2 Answer Key

QUIZ 2A Answer Key

Combining Form		Meaning
1.	abdomin/o	abdomen
2.	adip/o	fat
3.	anter/o	front
4.	caud/o	tail
5.	cephal/o	head
6.	chondr/o	cartilage
7.	crani/o	skull
8.	cyt/o	cell
9.	dist/o	away from
10.	dors/o	back of body
11.	epitheli/o	epithelium
12.	hist/o	tissue
13.	infer/o	below
14.	later/o	side
15.	medi/o	middle
16.	muscul/o	muscle
17.	neur/o	nerve
18.	organ/o	organ
19.	oste/o	bone
20.	pelv/o	pelvis
21.	poster/o	back
22.	proxim/o	near to
23.	somat/o	body
24.	spin/o	spine
25.	super/o	above
26.	system/o	system
27.	thorac/o	chest
28.	ventr/o	belly
29.	viscer/o	internal organ
30.	epi-	above
31.	inter-	between
32.	intra-	within
33.	peri-	around or about
34.	post-	behind or after
35.	retro-	behind or backward
36.	sub-	under or below
37.	supra-	above
38.	trans-	through or across

44 Chapter 2

QUIZ 2B Answer Key

Body System

Organs in the System

- 1. Integumentary
- a. skin
- b. hair
- c. nails
- 2. Musculoskeletal
- a. muscles
- b. tendons
- c. bones
- d. joints
- 3. Cardiovascular
- a. heart
- b. arteries
- c. veins
- d. capillaries
- 4. Hematic system
- a. plasma
- b. red blood cells
- c. white blood cells

5. Lymphatic

- a. thymus gland
- b. spleen
- c. lymph vessels
- d. lymph nodes

6. Respiratory

- a. nose
- b. pharynx
- c. larynx
- d. trachea
- e. bronchial tubes
- f. lungs

7. Digestive

- a. mouth
- b. salivary glands
- c. pharynx
- d. esophagus
- e. stomach
- f. small intestines
- g. colon
- h. liver
- i. gallbladder
- j. pancreas

8. Urinary

- a. kidneys
- b. urinary bladder
- c. ureters
- d. urethra

- 9. Female reproductive system
- a. ovaries
- b. fallopian tubes
- c. uterus
- d. vagina
- e. mammary glands
- Male reproductive system
- a. testes
- b. vas deferens
- c. urethra
- d. prostate gland
- e. penis

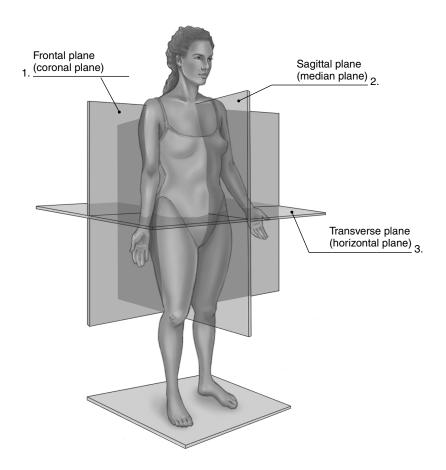
10. Endocrine

- a. thyroid gland
- b. pituitary gland
- c. testes
- d. ovaries
- e. adrenal glands
- f. pancreas
- g. parathyroid glands
- h. pineal gland
- i. thymus gland

11. Nervous

- a. brain
- b. spinal cord
- c. nerves
- 12. Special senses
- a. eyes
- b. ears
- c. nose
- d. tongue
- e. skin

QUIZ 2C Answer Key

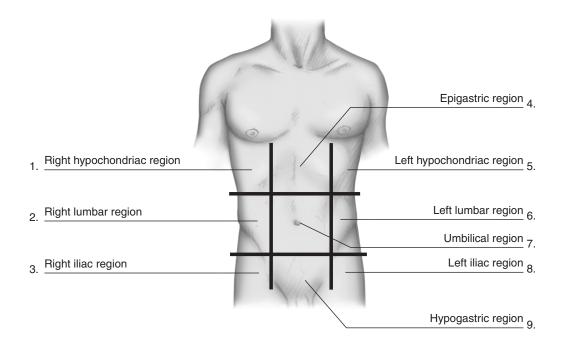


QUIZ 2D Answer Key

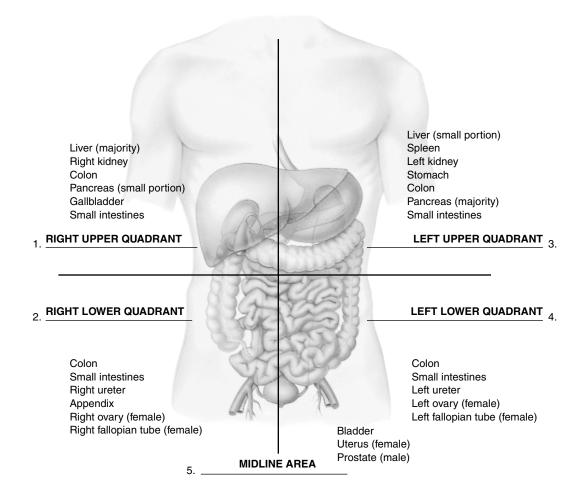
Directional Term Definition

1.	superior or cephalic	More toward the head, or above.
2.	inferior or caudal	More toward the feet or tail, or below.
3.	anterior or ventral	More toward the front or belly-side of the body.
4.	posterior or dorsal	More toward the back or spinal cord side of the body.
5.	medial	Refers to the middle or near the middle of the body or the structure.
6.	lateral	Refers to the side.
7.	apex	Tip or summit of an organ.
8.	base	Bottom or lower part of an organ.
9.	proximal	Located closer to the point of attachment to the body.
10.	distal	Located farther away from the point of attachment to the body.
11.	superficial	More toward the surface of the body.
12.	deep	Further away from the surface of the body.
13.	supine	The body lying horizontally and facing upward.
14.	prone	The body lying horizontally and facing downward.

QUIZ 2E Answer Key



QUIZ 2F Answer Key



QUIZ 2G Answer Key

Abbreviation		Meaning
1.	AP	anteroposterior
2.	CV	cardiovascular
3.	GI	gastrointestinal
4.	GU	genitourinary
5.	lat	lateral
6.	LLQ	left lower quadrant
7.	LUQ	left upper quadrant
8.	MS	musculoskeletal
9.	PA	posteroanterior
10.	RLQ	right lower quadrant
11.	RUQ	right upper quadrant
12.	UGI	upper gastrointestinal

QUIZ 2H Answer Key

1. C; 2. D; 3. D; 4. A; 5. C; 6. A; 7. B; 8. C; 9. B; 10. C